

NPS

***Serving
all of DoD***



***Joint Executive Systems Engineering Management
Distance Learning Masters Degree Program***

***By Dr. Wally Owen
Academic Associate and Program Manager***



Product Development in 21st Century

Joint Executive SEM-PD21

An Executive Graduate Education Program for Defense

**Offered in partnership with MIT's "Educational
Consortium for
Product Development Leadership in the 21st
Century" (PD21)**

**A Distance Learning Program with Unique Joint
Focus**

**Joint Services
Joint Engineering & Management
Joint Government & Industry**

**OPEN TO ALL QUALIFIED MILITARY OFFICERS,
FEDERAL GOVERNMENT CIVILIANS AND**

A LIMITED NUMBER OF DEFENSE CONTRACTOR CIVILIANS



- **PD21= The Educational Consortium for Product Development Leadership in the 21st Century**
 - MIT Center for Innovation in Product Development (CIPD) model of collaboration between university members currently MIT, UDM, RIT & NPS and sponsoring industries (Ford, Xerox, IBM, US Navy, Kodak, Boeing, etc..)
- **Mission**
 - To create a cadre of technical product development systems engineering leaders across the nation who have the knowledge, skills, and perspective to drive major improvements in American product development capability



Product Development in 21st Century

Joint Executive SEM-PD21 Program

A pioneering leadership program that prepares today's technical experts for successful careers as systems engineering leaders and technically grounded senior managers of their business enterprises:

- integrates business and technical elements
- integrates the best formal education, ongoing research, and industry practices
- continuously refreshes the curriculum through active partnerships with other world-class universities, research centers, and industry partners

=> Educational foundation needed by technical leaders to drive PD/SE innovations and help achieve acquisition excellence.



SEM-PD21 Key Features

- Two-year ***distance learning*** that students take 2 courses a quarter (68 credits) by ***VTC or online*** at their local sites in ***executive format*** one day a week.
- Remote sites located all ***across the nation***.
- Each student does ***thesis research***.
- Students attend two week kick-off at NPS participate in at least ***2 industry trips*** and attend graduation.
- Students involved in design and execution of ONR ***Gov't- Industry R&D Partnership*** conference.

=> Only NPS program authorized by Congress to enroll Defense contractors for degree credit with specific goal "to reduce product and project lead times required to bring such systems to IOC".



Product Development in 21st Century

Joint Executive SEM-PD21 Program

- Each Service has 5 seats plus 5 seats for Defense contractors and 5 open seats (25 total)
- Program kick-off in Monterey September 13-24, 2004
- Service sponsor seats centrally funded at no cost to student (\$46K value includes all tuition, books, other support materials, travel, per diem and VTC bridging)
- Students need undergrad degree in eng or a related scientific or technical field with high academic achievement
 - Five years experience directly related to systems engineering, product development and/or acquisition (3 years if student holds other Masters degree)
 - Endorsed by senior member of organization



SECNAV Annual Certification



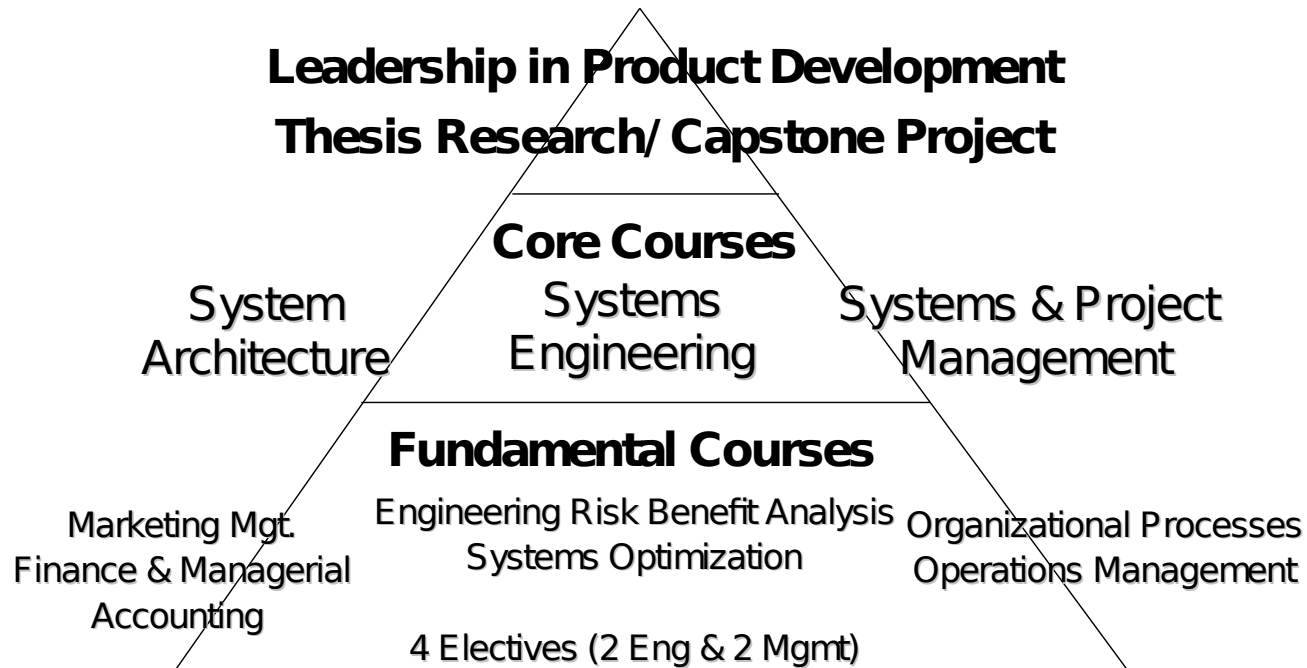
- **SEM-PD21 program certified by Secretary of the Navy to Congress allowing contractor civilian participation,**
 - “Our progress in privatizing acquisition has resulted in the migration of many activities once performed by Navy uniformed or civilian personnel to the private sector. It makes sense for ***Navy personnel and defense industry civilians to participate shoulder to shoulder in graduate studies*** focusing on improving Navy research, development, and acquisition cost, schedule, and performance. Such a program will greatly enhance the educational experience of both sets of students and will ***strengthen partnerships between the private and public sectors*** which is a critical element in our efforts to ***transform the Navy and Marine Corps acquisition and procurement process.***”
- (Letter to Chairman, Committee on Armed Services, March 9, 2001)**



Systems Engineering & Mgmt



Curriculum Design





Joint Executive SEM-PD21 Features



- **All students receive:**
 - **Joint Systems Engineering & Management degree**
 - Master of Science in Systems Engineering Mgmt, Systems Engineering or Product Development
 - **MIT Certificate of Recognition**
 - **DAWIA SPRDE level III (DAU equivalency certificates)**
 - ACQ101, ACQ201, PMT250, SYS201 and SYS301
- **5 different elective tracks:**
 - **Systems Acquisition (DAWIA PM level III)**
 - PMT352 equivalency certificate
 - **Information Systems Operations certificate**
 - **Space Systems certificate**
 - **Advanced Systems Engineering certificate**
 - **Software Engineering certificate**



Joint Executive SEM-PD21 Competencies

- **SE/PD philosophies and processes**
 - an innovative, enterprise-wide, and global perspective that enhances abilities to react to changing markets, new technologies, and new opportunities
- **Latest technological advances**
 - in-depth understanding and application of state-of-the-art tools for design, analysis, and management
- **New Business Acumen**
 - ability to transform their organization to better meet customer problems, needs, and understand market opportunities for product development innovations
- **System of Systems Perspective**
 - improved technical leadership through structured systems thinking, design, and management



Competencies Drive Innovation



- The systems engineering product development leader must apply "engineering" competencies to business enterprise
 - to the development of **strategic product architectures** that relate to their business enterprise **value chain**
 - to create products with **acceptable life cycle cost**, environmental impact, and product liability
 - to create products consistent with manufacturing and **supply chain** capabilities
 - to develop product architecture with **organizational architecture**
 - to identify and implement **enabling engineering technologies** and tools
 - to assess the **engineering merits and risks** associated with emergent technologies
 - to integrate enabling technologies into the creation of **realizable design concepts**



Joint Executive SEM-PD21 Highlights



- **Industry Visits**

- Northeast: MIT, Lincoln Labs, EMC, NUWC-Newport, Raytheon
- Northwest: Seattle, Boeing, Microsoft, Nordstroms
- Silicon Valley: Lockheed-Martin, Sun Microsystems, Cisco, Foundry, Intel
- Phoenix: Informs Conference, Honeywell and Boeing

- **Symposia/Sponsor events:**

- MIT- CIPD partner research symposium
- NPS- Meyer Institute of SE joint symposium



Joint Executive SEM-PD21 Highlights



- **Collaborations (examples)**
 - Annual consortium faculty workshops
 - UDM student design challenge
 - RIT joint industry trips
 - ONR Government-Industry R&D Conference
 - AFIT Partnership in 2004 (in-progress)
- **Thesis highlights (a few):**
 - Sunset Supply Base: Mr. Michael Barkenhagen
 - Social Network Analysis: Mr. Dale Moore
 - Risk Management: Mr. Michael Wheeler
 - Knowledge Management: Dr. Frank Chan



Joint Executive SEM- PD21

Benefits for Sponsors

- a **shortened timeframe** to develop educated leaders for the engine that drives SE/PD **innovations**
- more **satisfied** customers through **systems-oriented** design and management
- immediate **application** of learned knowledge and skills to current, as well as future, programs or projects
- **retention** of key leadership talent in a highly competitive market environment
- utilization of **state-of-the art** concepts and tools
- opportunity to **tailor** the curriculum and the educational experience to corporate needs
- access to the **latest advances** in product development



on Joint Executive SEM-PD21

Visit Joint SEM-PD21 site: <http://ocl.nps.navy.mil/pd21>:

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